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DDP 6050-59

27 November 1959

MEMORANDUM FOR: Acting Chief, DDP-DO/P

SUBJECT: P277 Night Photographic Capability

REFERENCE(S): a. Memo for A/C, DDP, dd 28 Sept 1959
DDP 6050-59
b. Memo for A/C, DDP, dd 16 Nov 1959
DD/P 4-9286, subject - P277 Flash Photo,
with attachments

1. The radome system has been removed from all [redacted] since the night photo system is dependent upon the radome for ground-speed/drift information to determine camera imagination-compensation rates, it would not be feasible to reinstall the night photo capability on "Short Notice" as proposed in referenced Memo B.

2. With, or without the radome, it is extremely doubtful if the existing P277 night photo system will ever provide a useful capability. Even if this system could be made to perform according to design specifications, there are several inherent limitations which would seriously restrict its utility:

a. The visible lighting system greatly increases aircraft vulnerability. Visible lighting of targets also pinpoints areas of interest.

b. The narrow angle of camera scan will not, in most cases, provide satisfactory coverage for target analysis. The vertical camera, for example, photographs an area only 560 feet wide at 750 feet.

c. As altitude of aircraft is increased, the intensity of the photo lighting system decreases. Since light intensity is marginal even at lowest altitudes, it would be impractical to attempt to increase flight altitude profiles without major redesign of the light system.

d. The existing IMC system requires the pilot to maintain altitude within plus or minus five percent. This is usually beyond the capability of a pilot in flat areas. In mountainous or hilly terrain, it is impossible.

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- 2 -

c. In addition to altitude, airspeed must be maintained within narrow confines. The ram air turbine generator for the lighting system requires a minimum airspeed of 250 knots. The CAA-12 camera system is limited to a maximum of 350 knots ground speed. A compromise must, therefore, be made when selecting a camera shutter speed between these ground speed limits. The combination of high airspeed, low altitude and minimum light intensity are not compatible factors for night photography.

3. Conclusion:

a. The existing night photographic system will not provide a useful addition to the agency inventory.

b. Other types of lighting systems have been tested with the PW7. No conclusive recommendations have been received which indicate improved performance as a result of these tests.

4. Recommendations:

a. That the night photo system of the PW7 be considered unacceptable for satisfying agency collection requirements and that it be removed from the agency inventory.

SIGNED

CHARLEY V. BESKILL
Colonel USAF
Chief, Operations Branch
DPO-DD/P

DPO/OPS/EPN/gms

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